

Title of Session: Problem Based Curriculum

Moderator: Chris Aguirre

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Room: Project Based Curriculum

ChrisA: we will get started in a couple of minutes

ChrisA: in the mean time my name is Chris I am Aspiring Principal in New York City

ChrisA: Can everyone else please introduce themselves

StefanieC: ok..I am an aspiring teacher in Texas

BJB2 chuckles...touché, Chris

StephaniK1: I am a HS math teacher in Ohio

ChrisA :-)

SusanK: I am an Assistive Technology Specialist in a small district in Virginia.

ChrisA: Does anyone teach middle school?

SusanR: I am an Occasional Teacher in Ontario, Canada

SusanR: Occasionally, yes

ChrisA: Nice to have you join us tonight Susan

SusanK: I work with Middle school students but I don't teach them as a class

ChrisA: In what capacity Susan

ChrisA: Does anyone teach at the elementary level?

StefanieC: I am student teaching at the elementary level...I want to teach Kinder

BJB2 . o O (or hope to teach at the elem. level?)

SusanK: To help them when they have trouble with written language.

StefanieC: or PreK

SusanK: Both learning disabilities and students with physical & cognitive disabilities

ChrisA: I would say we are ready to get started. This is the Problem Based Curriculum group and my name is Chris and I am really passionate about implementing this approach in wide variety of classrooms

SusanR: I sub primarily at the primary level

ChrisA: I would love to hear if anyone is currently using a problem as the basis for a lesson

StephaniK1: I have had extensive training on PBL's but honestly have had trouble buying into the concept at the HS level.

BJB2: I was talking to a Tapped In member earlier who teaches a gifted and talented class. Age range is 4.5 to 7 years in one class. I wondered if PBC would be applicable in that situation

ChrisA: Really Stephani I would love to hear why

ChrisA: I would say yes BJ

ChrisA: and this is why

BJB2 listens

ChrisA: a good problem should always tie the skills and the knowledge you're teaching together in a relevant way

ChrisA: in that respect a problem based approach should provide the relevance for what you're learning

ChrisA: don't we have a math teacher with us tonight?

StephaniK1: long story short, we tried to create a PBL for all 4 core subjects, had trouble, so settled on one integrating alg1 and physical science... I have not found a way to justify the amount of time the PBL takes for how little content the students learn.... I'm still open to the idea, that's why I'm here.

StephaniK1: I am math

ChrisA: Stephanie I why are you skeptical that it would work in HS situation

StefanieC: can you explain exactly what PBL is

ChrisA: Math is often taught in sequence

DavidWe listens

DavidWe: Math can be taught with science and technology (and other topics)... but.., it takes a willingness to work on it

StephaniK1: because I have done it several times and it has taken a lot of time for a little content... my kids get very overwhelmed and want me to just tell them how to do it.

ChrisA: I would define Problem based learning for this discussion as learning through enquiry in relation to an over arching problem that relates to lesson at hand

DavidWe: I think it is less about the content "being covered" than the idea that a project/problem can be approached from a variety of disciplines

SusanK: I sometimes wonder if it is too hard for student s with Learning Disabilities learn that way.

ChrisA: but I would love to hear your definition from your training

ChrisA: Why Susan?

SusanK: They have great difficulties generalizing

SusanK: I know I do too!

ChrisA: and me too at times but I think it is important to remember that a good problem allows students to put their knowledge to use in a practical way.

ChrisA: Math is often taught in a sequence?

StefanieC: yes it is

StephaniK1: I agree with the definition, but disagree with the statement about covering material.... I have to be able to justify a PBL by aligning it with standards.... yes math is taught in sequence

ChrisA: we tend to teach children to add and subtract then to multiply and divide

SusanR listens

ChrisA: I see what you're saying Stephani but I think you have two different issues

StephaniK1: listening

ChrisA: the first one is the standards. If we are in a standard based curriculum everything we are doing should be pointed towards them That doesn't change

ChrisA: implementing a problem to place the knowledge you're teaching in a relevant context for students allows them to experience where and how that knowledge can be used

ChrisA: I see standards as half the equitation

StefanieC: I agree with that

ChrisA: being able to multiply is great but using in a practical setting is were its real power comes into play

TerriG: that's a good point, Chris

ChrisA: I would say that math has great potential for a problem based approach because of two elements

ChrisA: is often taught in isolation from its application

ChrisA: and it is sequential

ChrisA: developing problems that go with the lesson that allow students to see the practical application of the math your teaching allows students ground the knowledge you're giving them in something tangible

ChrisA: I think that's an important step when it comes to math

ChrisA: how many times have you heard why do we have to know this

ChrisA: the fact with the "why" is unfortunately just the fact

TerriG: seems like it could apply to any area of teaching

StephaniK1: I can teach them and have them work with real life app's without doing PBL

ChrisA: provide the "why" and the fact becomes a tool to be used to do something with

ChrisA: I would contend that if you really taught using real life application then you are using PBL

StefanieC: is it possible to do PBL with all standards

ChrisA: yes most definitely yes

ChrisA: first off if the curriculum is aligned to the state standard then the problem is going to align with the state standard

ChrisA: who knows where out side of a math class the Pythagorean theorem is used?

DavidWe: . o O (Real Estate)

ChrisA: Who can tell me who used the quadratic formula on a daily basis?

DavidWe: roofers calculating the pitch of a roof

DavidWe: plumbers

StephaniK1: well if that is the case than I'm the PBL QUEEN! =)

ChrisA: where in there world do you have add $1/2$ and $3/4$

StephaniK1: cooking

DavidWe smiles

ChrisA: I think that is great. Yes cooking you do have to add fractions

ChrisA: but how about the others

BJB2: carpentry

TerriG: calculating grades

BJB2: anything where you have to measure or weigh

ChrisA: yes carpentry you definitely use add and subtract fractions and you calculate the long side of a triangle

ChrisA: you also do that if you are a forester or a game designer

BJB2: . o O (clothing designer, printer, graphic artist)

DavidWe: fabric/clothing designer Jane Barnes has worked with mathematicians/computer scientists to create novel patterns

ChrisA: my point is fallowing the math we teach to its entry point in a profession or practical application in your daily life will help ind development of problems that place students in the situation of using their abilities in an effort to solve

TerriG: that makes sense

StefanieC: I agree

ChrisA: Ya I agree David those are great examples of professions that use math on a daily basis and would be great places to develop problems for classroom math

DavidWe: Thanks, Chris

ChrisA: What about other subjects like History or English

StephaniK1: I'm with ya

SusanK: Writing?

ChrisA: can we use the same approach in these areas

DavidWe: . o O ("Writing to Learn Mathematics" - a book by Joan Countryman)

ChrisA: yes Susan Writing great question

SusanR: Physical Education

ChrisA: I think so

StefanieC: I think so

ChrisA: I think that

TerriG: would think so

ChrisA: Physical Education ya that's awesome I think that can work too (sorry my Californian is coming out)

BJB2: . o O (measuring playing fields, figuring out batting averages, regulations for sports equipment)

SusanK: It seems like workbooks try to use the problem solving approach but they miss somehow. I wish there was a way to make the problems more authentic.

StephaniK1: So PBL can be looked at as applying the curriculum to real life and having students apply it themselves... How does that situation look in the classroom?

StefanieC: I am wondering the same thing

DavidWe: Do you know about the Math Forum Problems of the Week, Susan?

ChrisA: I think developing problems that root themselves in some aspect of the real world would work great in writing. In fact I would go one step further that when you do that your writing takes on a new importance and is looked at in a different way

SusanK: no

StefanieC: Is there a certain method to approaching PBL

DavidWe . o O (www.mathforum.org/pow)

SusanK: thanks!

ChrisA: I take the this approach

DavidWe: It is now a low-cost subscription service, but very interesting problems - students need to respond with explanations - not just a numerical answer

ChrisA: First I look at the scope of the curriculum and then overlay the pacing calendar

ChrisA: once I have a good Idea of what is being delivered when I start by developing questions

SusanK: I don't have a membership.

ChrisA: key questions about the material I am covering where is it used; what does the knowledge do; How do I use the knowledge; who professionally uses this knowledge

BJB2 . o O (great opportunity to bring in people from the community)

ChrisA: I try really hard to get clear on the relevance of the information I am developing a problem for

ChrisA: yes I agree using this approach is a great way to bring in community members

SusanR: are there any web sites that you can recommend to complement this discussion? Exemplary sample environments in which the problem drives the learning

ChrisA: I had a lot of success in Kodiak with this approach and we were very successful in bringing in community members as experts in the field, for demonstrations and framing out the knowledge being presented

BJB2: <http://coe.ksu.edu/pbl>

StephaniK1: book: Problems as Possibilities by Torp and Sage

ChrisA: Hi Susan I have a few under links [in the PBC Group room] and I am always looking for more so feel free to add or subtract from the list

TerriG: good resource, thanks

BJB2: <http://www.squidoo.com/pbl>

ChrisA http://www.bie.org/pbl/resources/resources.php?category_id=5

ChrisA
<http://education.qld.gov.au/corporate/newbasics/html/pedagogies/connect/con4a.html>

ChrisA <http://pblmm.k12.ca.us/ClassExamples/ProjectImprovement.html>

ChrisA: I looked at these three before stepping in here tonight

StefanieC: thanks for all the resources

ChrisA: Before we wrap this up I would like to ask the question what makes a good problem?

TerriG: I will need to check these out later, thanks

SusanR: Thanks Chris

StephaniK1: a good problem is "messy"

ChrisA: please I would really love to hear everyone's opinion on this question

StefanieC: A good problem has multiple solutions

TerriG: allows for creativity

ChrisA: Ok I agree a good problem has multiple solutions

ChrisA: ya it definitely allows for creativity

ChrisA: but what else what makes a problem hit the mark and ground the knowledge we are teaching?

StephaniK1: relates to the kids' lives

TerriG: discovery

SusanR . o O (creative problem solving and students enjoy seeing problems solved in numerous ways..enhances the learning process)

BJB2: has an outcome or goal

StefanieC: when kids see that there is a connection to something that they are apart of

TerriG: related to one's experience

ChrisA: Personally a good problem should have many modality points kids should be listening, touching, moving, seeing

DavidWe . o O (mathematical models (for older students) allow for predictions)

ChrisA: that's an interesting point Terri

SusanK: Thanks Chris!

ChrisA: ya it should allow someone to access prior knowledge

TerriG: yes

TerriG: to see what works and what doesn't

SusanK: They like to see something happen because of their effort.

TerriG: agree

ChrisA: in fact if you are doing that I would say that is evidence of academic rigor in a thinking curriculum

StephaniK1: so what does all this look like in the classroom?

ChrisA: In fact I would say the same thing about having multiple solutions and allowing for creativity

BJB2: how about each of you bringing a sample of how you've used this discussion to improve your teaching to the next PBC discussion on March 19?!

ChrisA: It depends on the classroom

StefanieC: ok great idea

TerriG: sounds good

ChrisA: if it is an inclusive classroom where a teacher is teaching many subjects then the problem is used to connect the subject to an overarching theme

StephaniK1: are these sessions meant to have conversations that continue on to another day? (sorry, I'm new to Tapped In)

ChrisA: if it is a single subject classroom then I have seen many small problems be used to drive home the application of the skills and knowledge being presented

BJB2 . o O (great discussion!)

ChrisA: getting back to this question what makes up a good problem

BJB2 . o O (excellent participants and good leadership)

BJB2: a good problem gets the kids excited and engaged

TerriG: that's right!

SusanR: clearly thought out problem geared to the lesson outcome

StefanieC: you can see the wheels turning in their heads

ChrisA: in my opinion a good problem allows students access prior knowledge, is centered around a core knowledge set and demands students think at high levels by being challenging

ChristopJ: in math - one that has many ways of solving

ChristopJ: and multiple representations available

BJB2 . o O (I think we as educators forget how important it is to make learning a positive experience.)

ChrisA: I agree with that I think this type of approach has to be tempered with the notion that school is a safe place to fail.

StephaniK1: agreed BJ

ChrisA: it's OK to get it wrong before you get it right

TerriG: that's good

SusanR: experimentation

ChrisA: In fact I would contend that you most likely can not get it right without first getting it wrong

TerriG: exactly

StefanieC: like with predictions and hypothesis

SusanK: and rough drafts!

SusanK smiles

ChrisA: and in that way I think you set high expectations that allow students feel both success and failure in a safe environment

TerriG: true!

ChrisA: Well my wife is asleep my fire is out and VCR timer is blinking on and off Its just about time to wrap this up

SusanR: young students generally like the challenge of a problem...to explore, test ..trial and error

StefanieC: ok

BJB2 smiles. Thanks, Chris. Terrific discussion. See you March 19

TerriG: ok

ChristopJ: Thanks

SusanK: Thanks Chris!

StefanieC: thank you Chris

ChrisA: Yes I agree young students do like the challenge of a problem I think the trick to that is not to let that passion die out

StefanieC: I have learned a lot

TerriG: thanks

DavidWe: Good discussion tonight, Chris - keep the fire burning

SusanR: Thanks..thought provoking session

ChrisA: Thanks everyone for stopping by I will see everyone, I hope on March 19

StefanieC: bye

StephaniK1: thanks... sorry for being so pessimistic =)

ChrisA: no not a problem Stephani I look forward to continuing the dialogue

ChrisA: See everyone later and have a great night